

AMATEUR SATELLITE REPORT

AMSAT® NA Newsletter for the Amateur Radio Space Program



Amateur Satellite Report is endorsed by the American Radio Relay League as the special interest Newsletter serving the Amateur Radio Satellite Community

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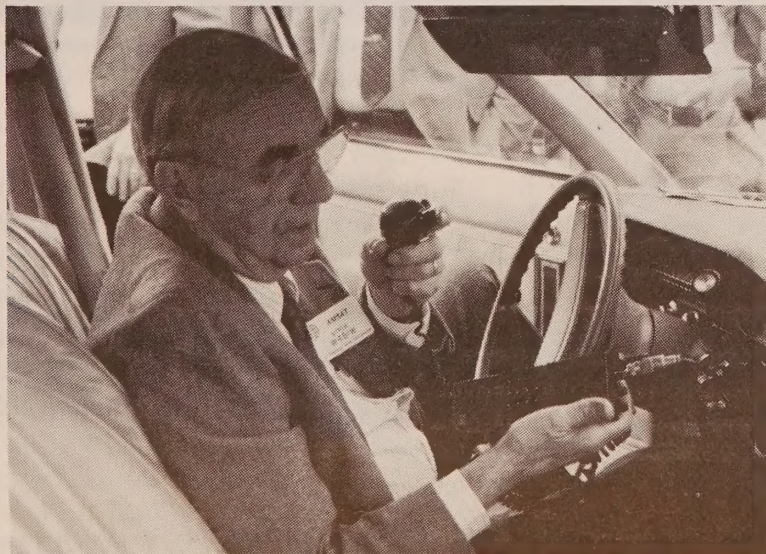
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Sixth AMSAT Space Symposium Meets In Georgia

With over 130 amateur satellite enthusiasts in attendance, representing 11 nations, the sixth AMSAT Annual Meeting and Space Symposium was held the weekend of November 11, 12 and 13 at the Atlanta Airport Marriott Hotel in Atlanta, Georgia. Attendees were treated to a weekend of southern hospitality offered by the joint efforts of local AMSAT volunteers and members of the Atlanta Radio Club who co-hosted this year's event under the able leadership of AMSAT Southeastern Regional Coordinator, Byron Lindsey, W4BIW who served as Symposium Chairman.

This year's symposium was highlighted with a number of special events. Activities began Friday evening when attendees were given a special tour of the facilities of Turner Broadcasting in downtown Atlanta. The tour of Turner Broadcasting, which operates Cable News Network (CNN), Headline News, Superstation WTBS and Turner Network Television (TNT), was arranged by Symposium Chairman, Byron Lindsey, W4BIW. Byron enjoyed a long and distinguished broadcasting career in the Atlanta area before retiring and is well known by many of the broadcast engineers at Turner Broadcasting. Following the tour of Turner Broadcasting a hospitality room was hosted by the Atlanta Radio Club at the Airport Marriott for the Symposium attendees. Official symposium activities began



Byron, W4BIW during the history making contact with U2MIR aboard the MIR space station. (WA5ZIB photo)

Saturday morning with opening remarks by Dr. John Champa, K8OCL, AMSAT Executive Vice President and Symposium Chairman Byron Lindsey, W4BIW. Following opening ceremonies, attendees had a chance to enjoy the presentation of a wide variety of papers concerning various aspects of the amateur satellite program. Titles of the papers included:

"Toward the Future in the Amateur Satellite Program — Next Steps in Ground Segment" Courtney Duncan, N5BF

"Weber State College Update" Stan Sjol, W0KP

"Satellite Orbital Characteristics During the Pre-entry Phase" L.C. Emerson, W4ITJ, Oak Ridge National Laboratory

"Unified File Management Scheme for Multi-Microsats by Inter-satellite Data Link" Yuu Kato, JM1MCF; Mikiasu Nakayama JR1SWB; and Moriyoshi Ohara, JK1VXJ

"AMSAT's Microsat/ Pacsat Program" Dr. Tom Clark, W3IWI

"The DSP Project Update" Dr. Tom Clark, W3IWI and Dr. Robert McGwier, N4HY

"The AMSAT/TAPR DSP 1 Project: Hardware Design" Lyle V. Johnson, WA7GXD

"AMSAT Field Organization Meeting" Doug Loughmiller, KO5I

"The Mount Toxaway NC Microwave Beacons and Linear Translator" Charles Osborne, WD4MBK

"The RS11 Ionospheric Experiment" Mike Parker, KT7D and Dan Morrison, KV7B

"Space Station Amateur Radio Station" Edward F. Stluka, W4QAU

"Project BACAR (Balloon Carrying Amateur Radio)" Hans Van De Groenendaal, ZS6AKV

"Amateur Radio Satellites — An Educational Experience" Hans Van De Groenendaal, ZS6AKV

"Polar Bridge Wrapup" David Adams, VE3HBF

"PACSAT Software" Dr. Robert McGwier, N4HY

"Microsat Project — Flight CPU Hardware" Lyle V. Johnson, WA7GXD and Charles Green, N0ADI

"OSCAR-13" Jan King, W3GEY

"The AMSAT Phase IV Project: A Mechanical Engineering Status Report" Dick Jansson, WD4FAB

"The Launch of NOAA-H Weather Satellite; A Mission Profile" Jeff Wallach, N5ITU



Symposium Chairman Byron Lindsey, W4BIW addresses the opening session of the 6th AMSAT Space Symposium. (WA5ZIB photo)

A major event of the Symposium occurred during the early Saturday morning session. During a coffee break, Symposium attendees gathered in the parking lot of the Marriott Hotel around W4BIW's mobile station to witness a truly historic event. For the first time in amateur radio history, a contact was to be made between an American amateur radio station and an orbiting Russian cosmonaut. AMSAT had learned only a few days earlier that Russian cosmonauts Musa Manarov and Vladimir Titov had not only placed an amateur two-meter transceiver aboard the Mir Space Station and mounted an antenna on the outside of the spacecraft during a spacewalk, but had also become the first radio amateurs to be trained, tested and licensed all while orbiting the earth. Special call signs had been issued to the cosmonauts, Titov was assigned the call sign U1MIR and Manarov, the reported instigator of the effort, was assigned the call sign U2MIR. Shortly after 9 AM EST Saturday morning W4BIW, with the help of Leo Labutin, UA3CR, made contact with U2MIR. Prior to his leaving Moscow, Leo had made arrangements with Soviet authorities for the Mir cosmonauts to be listening on 2 meters as they passed over the southern United States. Although the reception was marginal, Leo and Byron were able to receive a greeting to all those attending the AMSAT symposium from the orbiting cosmonauts. This historic contact was repeated Sunday morning prior to the AMSAT Board of Directors meeting.

The Symposium banquet was held Saturday evening. Conducting the 1988 Annual meeting in the absence of AMSAT President Vern Riportella, WA2LQQ was Dr. John Champa, K8OCL AMSAT Executive Vice President. To open the meeting several awards were made. Neil Foster, KC4MJ made a presentation to W4BIW from all of the committee members who had worked on the planning and organization of the Symposium with him. Next Ed Stluka, W4QAU presented a special picture of the Space Shuttle Columbia, which had carried the Explorer experiment into space, to several of the leaders of the international AMSAT groups represented. Following the presentation of these awards, each of the officers gave a short presentation about the ac-

tivities in their areas of responsibility during the course of 1988. Next, the first of two keynote speakers, Geoffrey Perry of England's Kettering group presented an informative and humorous discussion on some of his most interesting experiences in "satellite sleuthing". The second keynote speaker, Leo Labutin, UA3CR presented his address with the help of an interpreter. Mrs. Luda Deiterich of Georgia Tech University provided the Russian to English translation of Leo's comments to the banquet audience. Leo spoke about many of the humorous experiences the skiers of the SKITREK Expedition had encountered, explained how the Soviet cosmonauts had been able to smuggle their YAESU FT-290 aboard Mir in a cake box and offered insights into future Soviet amateur satellite activities.

After the keynote addresses were given Dr. Champa announced the outcome of this year's Board of Directors election. Those elected to the AMSAT Board were: W3IWI, WA2LQQ, KA9Q and WA5ZIB. VE2VQ was elected first alternate while KO5I was elected second alternate.

Next, awards for outstanding service to the organization during the past year were made. Technical Awards for their work on Microsat were presented to Tom Clark, W3IWI; Dick Jansson, WD4FAB; Lyle Johnson, WA7GXD and Matjaz Vidmar, YT3MV. Awards for outstanding service in the area of Field Operations were awarded to Keith Pugh, W5IU; Jack Crabtree, AA0P; Keith Berglund, WB5ZDP; John Clowe, W4ZPG; David Miracle, KA4UFM and Dave Cowdin, WD0HHU. Bob Rogers, W8JLE was recognized for his tireless efforts in support of AMSAT-NA activities during many Dayton Hamventions. Rich Ensign, N8IWJ was



Dr. Tom Clark, W3IWI leads a discussion concerning the Microsat project during the 6th AMSAT Space Symposium in Atlanta, GA (W4PUJ photo)

recognized for his efforts in supporting the Transpolar Skitrek. K.O. Learner, K9PVW was recognized for his efforts in organizing and implementing the Space Education Network via OSCAR-13. Larry Koziel, K8MU and Steve Culp, K8QKY were recognized for their efforts in making the 1987 AMSAT-NA Space Symposium in Detroit, MI a success as was Byron Lindsey, W4BIW for coordinating the 1988 event in Atlanta.

Over 40 prizes were given away during the course of the event. The grand prize this year was an ICOM IC-475A donated by ICOM America and was won by Edward Tanton, N4XY of Atlanta. Those companies who donated prizes

for the Atlanta Symposium were:

ACK Radio	Advance Receiver Research
AEA	ARRL
Astron	Avantek
Down East Microwave	ENCOMM
Ham Radio Outlet	Henry Radio
High-Spec	Icom America, Inc
L.L. Grace Communications	M2 Enterprises
MFJ Enterprises	Microwave Components of MI
Mirage/ KLM	Motorola
N2CEI	NEC
Phase Four Systems	RF Concepts
Silicon Solutions	Spartech Associates, Inc.
TE Systems	Varian/Eimac
Yaesu, USA	

On Sunday, the day after the Symposium, another historic first took place as Leo Labutin, UA3CR became the first Russian amateur to pass an American amateur radio exam, thus becoming AB4LZ. Leo passed all elements of the amateur exam from Novice to Amateur Extra. The amateur exam was administered to Leo by a VEC group from Georgia Tech. Leo mentioned that his biggest problem was understanding all of the FCC regulations but after studying the night before, he had no problem passing the various elements of the amateur exam. He definitely had no problem with the Morse Code and theory parts of the exams.

The Sixth AMSAT Space Symposium was a most memorable event for those who attended. Many of the participants commented that this year's effort set a new mark of excellence for AMSAT's annual showcase event. Special recognition should be given to W4BIW and all the committee members who worked so diligently to see that this year's event went off without a hitch. Congratulations to all these fine volunteers on a job well done.



Ed Stluka, W4QAU addresses the 6th AMSAT Space Symposium in Atlanta, GA. (WA5ZIB photo)

AMSAT Board of Directors Meeting November 13-14, 1988, Atlanta, GA

The Board of Directors of the Radio Amateur Satellite Corporation, Inc. met for two days following the Sixth AMSAT Space Symposium and Annual General Meeting at the Marriott Airport Hotel in Atlanta, GA. Present were Directors Dr. Tom Clark, Phil Karn, Jan King, Andy MacAllister, Dr. Bob McGwier, Bill Tynan, and Second Alternate Doug Loughmiller. Absent were Director Vern Riportella and First Alternate John Henry.



AMSAT Chairman of the Board Jan King, W3GEY addresses the 6th AMSAT Space Symposium concerning the OSCAR-13 launch campaign. (WA5ZIB photo)

Most of the AMSAT officers and many of the AMSAT members present for the symposium, also attended the open board meeting, which was described as one of the most productive in recent memory. Briefly, some of the major accomplishments of the board meeting included the following:

- Director Jan King was re-elected as Chairman of the Board for his second term.
- The following members were elected to the positions indicated:

Doug Loughmiller — President
Dr. John Champa — Executive Vice President
Courtney Duncan — Vice President, Operations
Jan King — Vice President, Engineering
Art Feller — Treasurer
Martha Sargovitz — Secretary

- Newly elected AMSAT President, Doug Loughmiller, appointed the following individuals to the positions indicated, and the Board of Directors quickly moved to endorse these appointments:

Andy MacAllister — Vice President, User Services
Jack Crabtree — Vice President, Field Operations
Bill Tynan — Vice President, Manned Space Programs
Ray Soifer — Vice President, Special Programs

- A new organizational publication was approved to replace ASR and Joe Kasser was appointed as its Editor In Chief.

- An agreement was reached with AMSAT - Italy (AMSATI), represented by Dr. Alberto Zagni (AMSATI Vice President,

Engineering), to cooperate in the construction of a new satellite in the Microsat Series.

- The board reviewed and endorsed a preliminary 1989 budget produced by the Financial Committee.
- A TAPR-AMSAT agreement was approved involving joint efforts towards the development of the Digital Signal Processing (DSP) Project.
- Weber State College was given authorization and support to continue their student efforts involving the Microsat Series and the Phase IV Project.
- Revisions to AMSAT By-Laws and Articles of Incorporation were approved to bring them current relative to the increased size, scope, and complexity of the organization. (Note: The revised By-Laws will be published in the next edition).

- The board reviewed progress in the following major project areas:

Microsat Series of Satellites
AMSAT-OSCAR 13 Operations
Phase IV (Geostationary) Satellite Project
Digital Signal Processing (DSP) Project

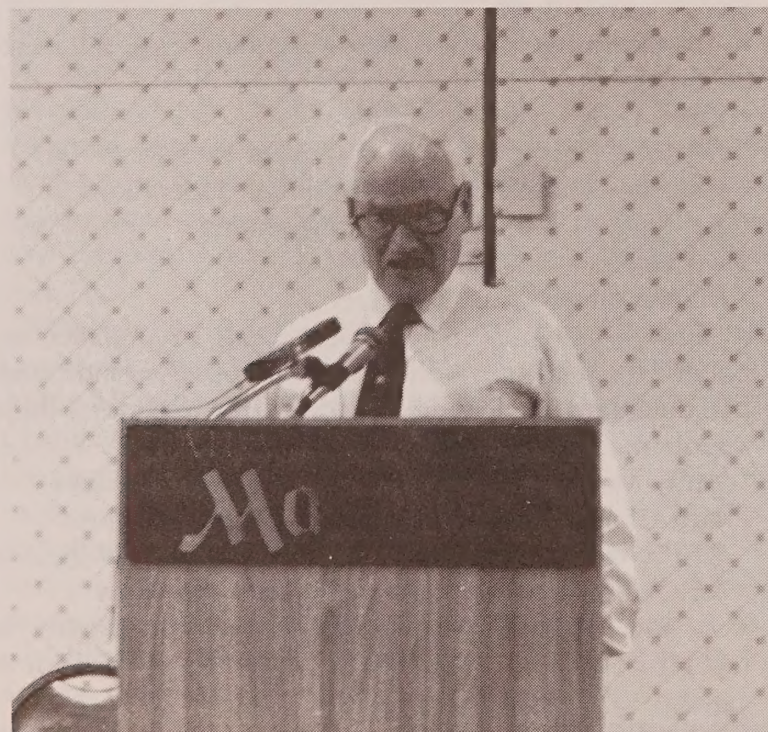
The Board reviewed developments in the following major programs:

User Services
Manned Space Programs

- A closed board session was conducted involving discussion of a possible contractual agreement with Interferometrics, Inc. of Vienna, VA.

The minutes of the Board of Directors meeting will be prepared by the Secretary to the Board, Martha Sargovitz, in the near future. As is the usual practice, copies of the minutes will be provided to the members who request them and who furnish a self-addressed stamped envelope (business size with two units of postage, please) to the headquarters.

This preliminary report of the board meeting is respectfully submitted to the membership by Dr. John Champa, Executive Vice President.



Keynote speaker Geoffrey Perry of England's Kettering Group addresses the 6th AMSAT Space Symposium. (WA5ZIB photo)

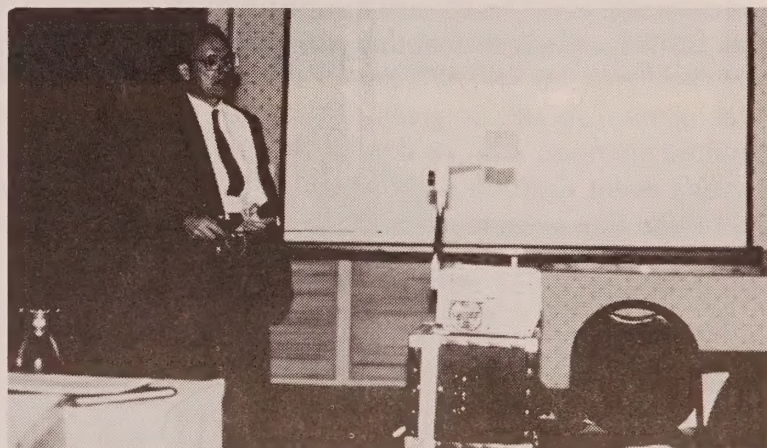
OSCAR-13 Operating Schedule

AMSAT-DL Ground Command Station, DB2OS, wants to remind users that there will be a spacecraft attitude change performed on OSCAR-13 around January 6, 1989. This reorientation of AO-13 is necessary in order to efficiently manage battery charging. Because the attitude change will result in a change in "squint" angles around apogee, Mode L operating times will be adjusted so that the antennas will point directly toward the earth's center at that point in the orbit. The following is the schedule which will become effective on January 6, 1989:

OSCAR-13 Operating Schedule V5.0 Effective 06Jan89

Mode	From (Inclus)	Thru (Inclus)	Remarks
Off	MA 240	MA 003	Solar Eclipse Window
B	MA 003	MA 100	
L	MA 100	MA 150	Mode JL Optional
B	MA 150	MA 240	

The Bahn Coordinates after the attitude change on January 6th will be: Bahn Latitude=0.0 degrees, Bahn Longitude=180.0 degrees. Mode S operational times will be announced later on the AO-13 beacon. This schedule will remain in effect until March 15, 1989. At that time the schedule again will be adjusted to account for solar eclipse periods.



Dick Jansson, WD4FAB addresses the 6th AMSAT Space Symposium on the topic of Microsat. (W4PUJ photo)

WD0HHU Named Director Of The AMSAT News Service

AMSAT President Doug Loughmiller, KO5I, has announced the appointment of Dave Cowdin, WD0HHU as the Director of the AMSAT News Service effective immediately.

WD0HHU will be responsible for the collection and dissemination of information to be used in the support of the weekly AMSAT nets and packet radio bulletins.

Dave has been a very active HF net control station having been NCS for the 20 meter International AMSAT Net for the past four years.

Anyone wishing to supply information to the AMSAT News Service is asked to forward such information to WD0HHU. The deadline for inclusion of material into the weekly ANS release is typically Thursday evening US time. Provisions will be made for the release of late breaking news



Keynote speaker Leo Labutin, UA3CR delivers his keynote address with the help of interpreter Luda Deiterich of Georgia Tech University. (WA5ZIB photo)

items as situations warrant. The address to submit material to the AMSAT News Service is:

AMSAT News Service
c/o Dave Cowdin, WD0HHU
8325 S. Yukon Street
Littleton, CO 80123

Dave can also be reached by phone at (303) 972-0648.

AMSAT congratulates WD0HHU on his appointment and we wish him well in his efforts towards his new responsibilities.

An Open Letter To All AMSAT Members

Dear Fellow AMSAT Member:

As is reported elsewhere in this issue of *ASR*, during the recent AMSAT Board of Directors meeting in Atlanta, GA, the AMSAT Board of Directors entrusted me with the stewardship of our organization by electing me to the position of AMSAT President. While I accept this responsibility eagerly and with great expectations I also realize that a great many challenges lie ahead. The responsibility of running the day to day operation of a 5,000 member volunteer organization will require constant vigilance on my part and the unified efforts of many capable volunteers working together. I do not take this responsibility lightly.

I'm sure you'll agree with me that 1988 was a banner year for our organization. The year was highlighted with many significant accomplishments such as the successful launch and deployment of AMSAT-OSCAR 13, the planning for a multiple payload mission in the form of the Microsat project and the amateur radio operation by the Russian Cosmonauts from aboard the Mir space station. These are but a few of the major accomplishments in which each of us can take pride.

AMSAT offers some of the finest member services of any amateur radio organization. Counted among our member services are our publications, software exchange, QSL bureau, News Service and Field Organization. All of which are designed to help you, the member, garner as much as possible from your OSCAR satellite activities. All of this does not happen by accident. It comes about through the efforts of a few very talented and dedicated volunteers who, because of their commitment to our organization, and the ideals it represents, give freely of their time and efforts to see that this organization reaches it's fullest potential and you, the member, amass the greatest possible benefit from

your association with it.

A case in point of the type of person I am speaking of is my predecessor as AMSAT President, Vern "Rip" Riportella, WA2LQQ. For the past 4 years Rip has served as this organization's President with a high degree of professionalism and distinction. Rip's commitment to AMSAT and the OSCAR satellite program is evident to all of us who know him and who have had the opportunity to work with him. During his tenure as President, Rip implemented many innovative ideas and constantly championed the cause of the amateur satellite program, both inside and outside of the amateur radio arena. I want to take this opportunity to publicly thank Rip for the outstanding service he has rendered to AMSAT during his tenure. I do so knowing that a simple "thank you" is not enough to extend to someone who has worked as long and as hard as Rip has for our organization.

I want to assure each of you that while the leadership of the organization has changed, the priorities have not. AMSAT will continue to fulfill the goals and objects as outlined in our by-laws. We will continue to pursue exciting projects and to lead amateur radio into the future. We will continue to build upon our member services thus enhancing the value of AMSAT membership.

I am committed to being responsive to the needs of the membership. It is my feeling that our organization is best served when the needs of the individual member are met. In this regard, I am interested in your thoughts and concerns. If you have something that you would like to share with me, please forward your comments to me at AMSAT Headquarters.

1989 promises to be a very eventful year for AMSAT. I look forward to working with each of you in accomplishing our common goals and objectives.

Sincerely,

Doug Loughmiller, KO5I President

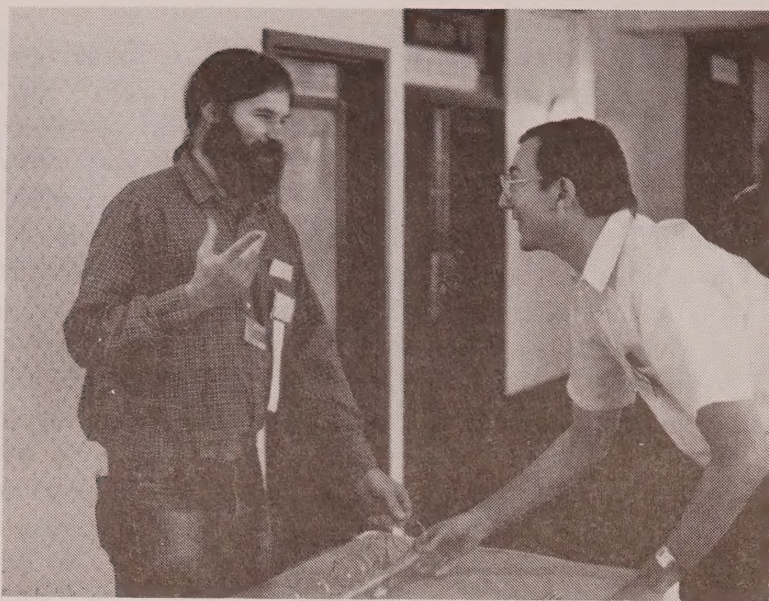


AMSAT-Italy Vice President Dr. Alberto Zagni, I2KBD and newly elected AMSAT-NA President Doug Loughmiller, KO5I following the AMSAT-NA Board of Directors endorsement of the AMSAT-Italy proposal to engage in a Microsat construction project. (WA5ZIB photo)

Field Operations Appointments

Outgoing Vice President of Field Operations Doug Loughmiller, KO5I announces the following appointments made during 1988:

Dave Stephens, WB0P has been appointed Regional Coordinator for the Rocky Mountain Region. Dave replaces Jack Crabtree, AA0P who was recently elected Vice Presi-



Bill Olson, W3HQT and Dave Cowdin, WD0HHU discuss antenna design during the AMSAT Space Symposium in Atlanta, GA. (WA5ZIB photo)

dent of Field Operations by the AMSAT Board of Directors.

Appointed to the position of Area Coordinator in the Southeastern Region are: Mike Callihan, N4KHG of Seminole, FL; Steve Park, WB9OEP/4 of Seminole, FL; John McDonald, WB4ZXS of Cocoa, FL; David Miracle, KA4UFM of Lithonia, GA; Al Zoller, W6OTE of Roswell, GA; Charles Preston, N4SXM of Chamblee, GA; Don Adams, WD4NAE of Pelham, GA

Appointed to the position of Area Coordinator in the Rocky Mountain Region are: Keith Goobie, NY0T of Colorado Springs, CO; Wally Nelson, W7KRC of Bountiful, UT

Appointed to the position of Area Coordinator in the Pacific Region are: Chuck Word, NF6S of Livermore, CA; Gary Nakayama, KH6JRB of San Mateo, CA; Gordon Fuller, WB6OVH of Fair Oaks, CA

Appointed to the position of Area Coordinator in the West Gulf Region is: Keith Berglund, WB5ZDP of Fort Worth, TX

Appointed to the position of Area Coordinator in the Dakota Region is: Michael Filipiak, KD9Q of Sheboygan, WI

AMSAT Board Approves New Publication

Based upon input from AMSAT members, the AMSAT Board of Directors during its November 13-14 meeting voted to suspend publication of *Amateur Satellite Report* in lieu of the creation of a new flagship periodical.

The AMSAT Board felt that a change in content and format was warranted based upon input offered from a wide cross section of members in the weeks and months leading to the AMSAT Annual Meeting. It was found that members wanted more in-depth material contained in the flagship publication.

The board also decided, based upon financial considerations, that a new publication schedule should be implemented. The new schedule approved by the board calls for a bimonthly publication cycle rather than the biweekly publication cycle in which *ASR* had most recently been produced.

Joe Kasser, G3ZCZ/W4 has volunteered to serve as Editor In Chief of the new periodical. G3ZCZ served for a number

of years in that capacity for both the original *AMSAT Newsletter* and the early issues of *ORBIT Magazine*. Joe's return to the helm of AMSAT publications is a most welcomed one by those who remember the excellent work he has done in that area in the past.

While the name of the new periodical has not yet been decided upon at press time, indications are that the name might well revert back to the *AMSAT Newsletter*. Publication of the new periodical will begin in early 1989 with late February serving as the target date for the posting of the first issue.

ASR will be published in one final publication run following this issue, thus *ASR* 187 will mark the end of almost exactly eight years of biweekly publication.

For our new publication to be a success, G3ZCZ will be relying upon the contribution of articles from our members. A wide cross section of material is sought covering a wide variety of topics from within the amateur satellite program. If you have an article that you would like to see published, please forward your material to Joe Kasser, G3ZCZ via AMSAT Headquarters, P.O. Box 27, Washington, D.C. 20044.

U2MIR Operation A Great Success

By Ray Soifer, W2RS

Soviet cosmonaut Musa Manarov now holds at least two space records. He and Vladimir Titov returned to earth on December 21 after more than 366 days in space. Recognizing their many achievements, they each were given the Order of Lenin and made Heroes of the Soviet Union. And, from November 8 through December 19, Musa, operating from the Mir space station as U2MIR, undoubtedly made more two-way contacts with amateurs on the ground than did all three previous ham-in-space missions combined.

During the six-week operation of U2MIR, a few contacts were also made by mission commander Vladimir Titov, under the call U1MIR, and by Dr. Valeri Poliakov, operating as U3MIR. But the lion's share of operating was done by Musa, who also obtained his amateur license while in space, arranged for and installed the Yaesu FT-290R transceiver (donated by UA6HZ), and together with Vladimir erected the two-meter antenna during an extra-vehicular activity. The first North American contact was made by Byron Lindsey, W4BIW, and Leonid Labutin, UA3CR, from Byron's station wagon in the parking lot of the AMSAT-NA annual meeting in Atlanta on November 12.

To Musa go the heartfelt thanks and congratulations of AMSAT organizations and radio amateurs around the world. If you were fortunate enough to have worked the spacecraft, QSL via Boris Stepanov, UW3AX, P.O. Box 679, 107207 Moscow, USSR. The two-meter amateur station has been left aboard Mir, and by now may have been replaced by a 10-watt version. Valeri Poliakov is scheduled to remain in orbit until April along with two other cosmonauts. However, he is said to speak only Russian, and no reports of amateur contacts since Musa's departure have reached us at this writing. We remain hopeful of future activity, though, so monitor 145.550 MHz while Mir is within range of your station, and report details of any contacts since December 19 to AMSAT-NA.



Courtney Duncan, N5BF, pictured here addressing the 6th AMSAT Space Symposium, was elected Vice President of Operations by the AMSAT Board of Directors. (WA5ZIB photo)

ON7CL Silent Key

AMSAT regrets to report the addition to Silent Keys of Lucien J.H. Collard, ON7CL in October 1987. In a letter recently discovered, he wrote his mother of his great interest in AMSAT and of his wish to donate \$1000 to the organization to be used to foster the growth of AMSAT in order to continue "fraternity between people and most of all between coming generations." AMSAT appreciates Mr. Collard's generosity and support of AMSAT's programs.

Des Moines, Iowa Selected As 1989 Annual Meeting Site

AMSAT President Doug Loughmiller, KO5I has announced that the AMSAT Board of Directors have selected Des Moines, Iowa as the meeting site for the 1989 Annual Meeting and Seventh Space Symposium. The meeting will be held on the weekend of November 10, 11 and 12.

The '89 symposium will be directed under the capable leadership of long time AMSAT supporter Ralph Wallio, WØRPK who will serve as symposium Chairman. Watch the AMSAT nets and publications for further information on this event.

Project DOVE Update

The Brazilian MicroSat known as DOVE, now under construction, is dedicated to educational purposes. Its main operating mode is a synthesized speech beacon on 145.975 MHz NBFM that will be used to transmit telemetry and voice messages; initially messages of peace and goodwill written and spoken by school children.

AMSAT-NA Science Education Advisor Rich Ensign,

N8IWJ, reports that he has sent out a large number of Project DOVE Educator Letters to schools and Amateur Radio operators aiding schools. The letters explain PROJECT DOVE and the criteria by which messages are created for DOVE to speak as it orbits the Earth. Twenty-two states and 14 foreign countries are represented by requests so far. Rich will be receiving and cataloging messages for transfer on to command stations after DOVE is launched and declared operational. N8IWJ is also preparing a DOVE Teachers Guide to aid educators in tracking the satellite and receiving DOVE's signals as well as classroom exercises and experiments that can be done using DOVE. Initial distribution of the guide is planned to schools who submit messages.

There is no deadline for requesting materials and submitting messages. Amateur radio operators world-wide who wish to involve local school children in creating messages for DOVE and aid them in DOVE reception once launched should contact Rich Ensign, N8IWJ, AMSAT Science Education Advisor, 421 N. Military, Dearborn, MI 48124, U.S.A.

The DOVE MicroSat is a joint project of BRAMSAT (AMSAT Brazil) and AMSAT-NA.

Short Bursts

- Max, XE1XA reports that a DX-pedition to the Revillagigedo Islands will take place from January 8th thru the 16th under the call sign XF4L. Max indicates that he will be active on AMSAT-OSCAR 13 modes B and J using portable equipment during this DX-pedition. Max stresses that there are many objectives for this operation including; the activation of a new country via satellite, to exhibit OSCAR satellite communications to a wide audience in connection with this DX-pedition, and to exhibit the potential of portable station configurations for use in emergency communication activities. Look for Max, XE1XA as he operates from XF4L via AMSAT-OSCAR 13.

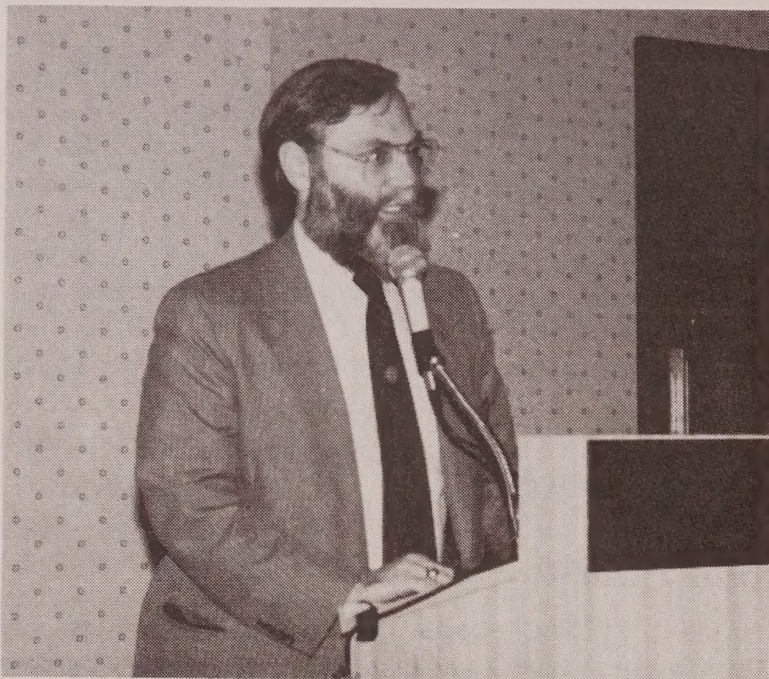
- Tom, W6ORG reports that NASA select audio and video during shuttle missions are being repeated directly from a TVRO system through the K6KMN 1241.25 Mhz repeater to serve the Los Angeles area hams interested in Space Shuttle activity. For more information and video schedule interested Southern California amateurs are invited to check in to the Mt. Wilson Monday night ATV activity net on



Three of the many international participants of the Atlanta Space Symposium were: Geoffrey Perry of England's Kettering Group; Leo Labutin, UA3CR of AMSAT-U and Matjaz Vidmar, YT3MV. (W4PU) photo)

146.430 Mhz. simplex with Doug, K6KMN serving as net control.

- AMSAT is in need of additional HF net control stations. Help is needed with both primary and back up positions. If you would be interested in serving in this very important capacity, please contact AMSAT Headquarters.



AMSAT Executive Vice President, Dr. John Champa, K8OCL addresses the opening session of the 1988 AMSAT Annual Meeting and 6th Space Symposium. (WA5ZIB photo)

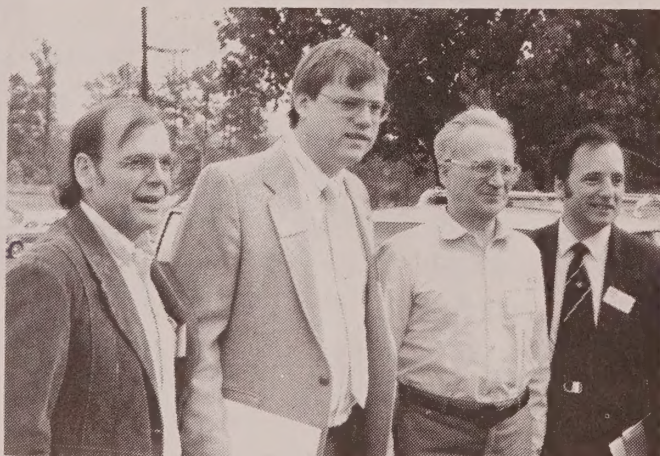
- Members living in the Southeastern Michigan, Northern Ohio, and Western Ontario areas should tune in to the AMSAT Detroit Area Net. The net meets at a new time, i.e. 8 PM (local) every Thursday evening. The Net control station is Rich Ensign, N8IWJ, AMSAT Science Education Advisor, with back-up provided by Dr. John Champa, AMSAT Executive Vice President, and Tim Rush, N8DUY, a local AMSAT member. The net has become very popular in the area, as reflected by the average of 40 check-ins per session! The primary frequency for the net is 224.46 MHz using the WD8CIK repeater. The WD8CIK/R Repeater System will also be on 1284.00 MHz (1272.00 MHz input) in early February. That means when the Detroit AMSAT Area Net is fired up on Thursday evenings, it will be on (at least) four frequencies, i.e. 224.46 MHz (the originating frequency), 145.33 MHz (W8ICN), 443.325 MHz (N8DXG), and 1284.00 MHz (WD8CIK/R). According to Steve, WD8CIK, the 1.2 GHz repeater will be tied into the 224.46 MHz repeater "all the time." Note: The net is also occasionally linked to 147.22 MHz (WA8CTY/R). This system also allows Novice Class stations to check into an AMSAT Net to find out about the fantastic world of Amateur Space Communication. The WD8CIK repeater is nearly always linked to the N8DXG repeater on 443.325 MHz. In addition, during the net these two systems are linked to the Detroit Edison Repeater, W8ICN, on 145.33 MHz. Join the fun every Thursday evening and check-in on one of the above frequencies.

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K2UBC, KO51, UA3CR and G3ZCZ/W4 following the successful contact with U2MIR during the Atlanta Space Symposium (WA5ZIB photo)

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